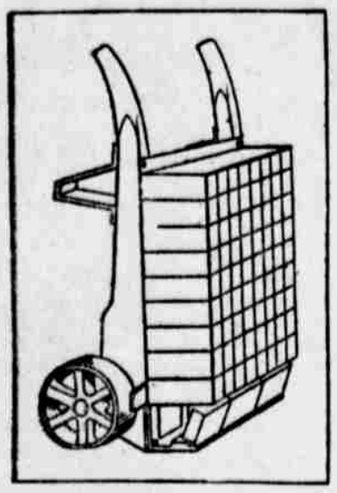
INDUSTRY AND MECHANICS

HANDLE BRICKS WITH PALLET

General Appearance of Implement Is That of Baggage Truck—Invented by Kansas Man.

A pallet designed for a different way to handle bricks than has been in vogue in the past has been patented by a Kansas man. The general appearance of the affair is that of a baggage truck, but the metal edge that runs across the lower end is so constructed that a row of bricks can be arranged on it in a tilted line, resting on their edges and end to end. The stack of bricks then can be piled up on top of these, but at right angles to them, the bottom row supporting the whole



Pallet for Bricks.

stack. By moving the whole stack bodily the bottom layer of bricks is turned over so that they rest on their flat sides and support the rest in that way, at the same time projecting far enough outside to hold another row. Filed up in this fashion, the bricks can be trundled to any part of a building operation and dumped there.

PROGRESS IN FUEL BRIQUETS

This Country Still Lags Far Behind Some of European Countries, Especially Germany.

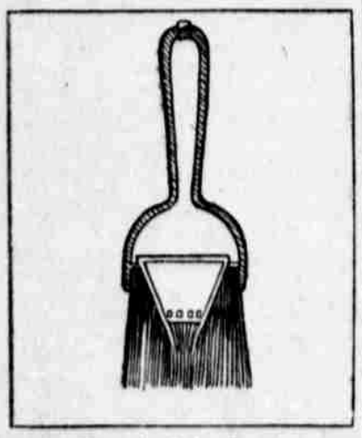
Considerable progress has been made in the development of fuel briquetting in the United States during the last two years, according to Edward W. Parker, in a statement just made public by the United States geological survey. This country, however, still lags far behind some of the European countries, particularly Germany, in this line of industrial activity. In 1909 the production of fuel briquets in the United States was 139,661 short tons, valued at $652,697, an increase of nearly 55 per cent. in quantity over 1908. In 1911 the production amounted to 212,443 short tons, valued at $769,721, the increase in two years amounting to 72,782 short tons or 52 per cent. in quantity, and to $317,024, or 70 per cent. in value.

In Mr. Parker's opinion, more attention should be given to this industry, as on it depends to a considerable degree the utilization of some grades of fuel which are now wasted or sold at less than the actual cost of production. The reprehensible practice of shooting bituminous coal "off the solid"—a practice notably prevalent in the fields of non-coking coal in the Mississippi valley—produces an inordinate proportion of slack, which might be made into briquets.

WORKED LIKE FOUNTAIN PEN

No Time Lost With New Paint Brush by Dipping It Into Can— Does Its Work Evenly.

Most ingenious is the fountain paint brush patented by a New York man. This device will not only save time because it does not have to be continually dipped into a can of paint, but it will do its work much more evenly, as it will always have the same amount of paint on its bristles. It is very simple, like most really ingenious things. The head and handle of the brush, instead of being a solid piece of wood, is hollow metal, form-



Fountain Paint Brush.

ing a paint reservoir. A number of perforations lead to the bristles and through these the paint continually leaks, keeping the brush always filled with paint, and the same amount of paint. Or the brush can be made with a wooden handle and with a removable reservoir setting into the middle of it.

HOME VACUUM ICE MACHINE

German Invention of Particular Interest Because of Elimination of Dangerous Acids.

A German vacuum ice machine, made in sizes adapted for use in the home, is of interest because it does not involve the use of sulphuric or other dangerous acids. It may be operated by hand or by a small electric motor, the smallest type of machine producing from 4 to 6 pounds of ice at each operation.

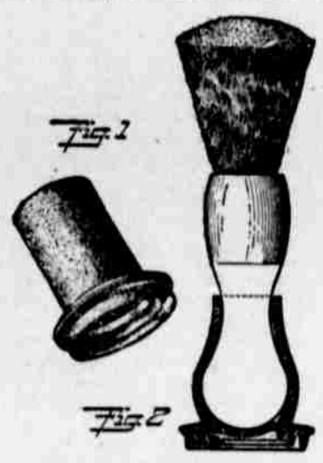
The apparatus consists essentially of two communicating drums attached to a common shaft, the smaller drum being provided with an outer casing having insulating walls. The ice is formed as a circular shell between the smaller drum and the outer casing with which this drum is provided. The larger drum, which is hermetically sealed, contains an absorbent liquid, chloride of zinc, containing a small proportion of water. This liquid half fills the drum, the remaining space being a vacuum, and serves during the life of the machine.

In the operation of making the ice, gas jets under the large drum are lighted and the drum slowly rotated, the heat driving off a part of the water in the absorbent liquid, the water passing, in the form of vapor, into the smaller drum, where it is condensed by means of cold water, which is made to flow over this drum. When the distillation of the liquid has proceeded sufficiently, the flame is extinguished, the smaller drum is then covered with its annular casing, and water is poured in until the space between the drum and cover is filled. A water jacket is then clamped over the larger drum, and water is passed through it to cool the absorbent liquid. The apparatus is then again slowly rotated, and as the absorbent liquid cools, it causes evaporation and absorption of the distilled water in the smaller drum. Thus the temperature of the smaller drum is greatly lowered and the water between this drum and its casing is frozen.

LATHER RUBBER MADE HANDY

Obviates Necessity of Rubbing Soap Into Skin With Fingers While One Is Shaving.

To obviate the necessity of rubbing lather into the skin with the fingers, when shaving, a small attachment for



Lather Rubber.

the shaving brush has been provided. It consists of a rubber cap which is fitted over the handle of the brush. The end face of the cap is formed with a series of concentric annular flanges which catch the lather and assist in rubbing it into the skin.

INDUSTRIAL AND MECHANICAL NOTES

Glycerin is a by-product of the soap factory.

It takes 7,000 tons of coal to bring one of the modern liners across the Atlantic.

Two districts in the Philippines are yielding gold profitably and prospecting is in progress in several other localities.

A calcimine brush invented by an Ohio man consists of a number of thin brushes fastened side by side to a single handle.

An Alabama man has invented apparatus to be fastened to the back of a horse to hold its hoofs in position for shoeing.

A locomotive that originally was built in 1847 has been reconstructed and given light work to do by an English railroad.

With a production of more than five and a half billion pounds the Chilean nitrate fields established a new record last year.

The value of canned pineapples shipped from Hawaii during the fiscal year of 1911 amounted to two million dollars.

The success of the stepless car on the street railways of New York has led to the placing of an order for 150 cars of this type.

The back support of a stepladder patented by a Texas man can be turned up to form an extension ladder of the ordinary type.

A heating plate of the usual type, a stand to hold food and a hood to cover them form a new oven for use over a single gas stove burner.

To an actress is attributed the recent invention of a capacious trunk which can be converted into a complete bureau and dressing table.

A machine which thoroughly cleanses 300 barrels an hour by washing them inside and out and rinsing them several times has been invented

LONDON BOY WAS SURE A TERROR

Seven-Year-Old Lad Who Made Father Buy Him Beer and Cigarettes.

THRASHED HIM, TOO

Court Has to Step In to Protect the Much Abused Parent, Whose Body Was Mass of Bruises From the Youngster's Kicks.

London.—"Listen to those yells! Isn't it awful? That's little seven-year-old Tommy Hancell thrashing his father again."

"I know. It's terrible the way Mr. Hancell has to go out and get beer and cigarettes for that youngster. But, if he refuses, Tommy gives him an awful beating with the tongs or anything else he can get hold of."

One would hardly think that the above could be a real conversation, but remarks like these have been heard more than once in the mean street in the town of Bollington, Cheshire, where until a day or two ago lived the youngster of seven who appears to be one of the worst juvenile terrors on record. The details that have just been given in the local police court regarding his ill-treatment of his father, an able-bodied man of middle age, would have been unbelievable if there had not been plenty of evidence to corroborate them. As a result of the proceedings the young demon has been packed off to an industrial school, where they will probably succeed in knocking some of the devil out of him.

Ironically enough, the first witness to indorse young Hancell's claim to be a holy terror of the first water was the agent of the National Society for the Prevention of Cruelty of Children. The person would have been the representative of a society for the prevention of cruelty to fathers, for the witnesses declared that the boy had only to say to his sire, "Go and get me some beer and some cigarettes, or I'll give you a jolly good thrashing," to have his command carried out. When in bed, continued the agent, the boy had repeatedly kicked his father to such an extent that dry abscesses had formed on his body.

Then the persecuted parent went into the witness box. His full name is John Thomas Hancell, and he is a cotton operative. He said that he had had to fetch beer when his sev-

"Go and Get Me Some Beer and Cigarettes."

en-year-old son requested it, because the boy had led him such a life, and beat him with the scrubbing brush, tongs and dolly-pegs, the latter being wooden arrangements used in washing clothes. Hancell declared that his offspring would not let him get into bed until he (the youngster) had gone to sleep, and that the boy frequently had kicked him out of bed.

A girl named Forrest, who lives across from the Hancells, said she had repeatedly heard the boy ill using his father. When anyone went to the father's assistance, she said, the boy locked the door, took the key out of the lock and so prevented them from getting in. She said that the language the boy used was so awful that she would not like to repeat it. A next-door neighbor of the Hancells, Ellen Wood, agreed that the youthful Thomas used fearful language and said he was not fit to be at large. She said that Hancell senior dared not do anything else than bring the beer and cigarettes whenever his seven-year-old prodigy demanded that he set 'em up.

Court House for $10.

Canton, O.—At a public auction the Hardin county court house was sold for $10. John Burkhardt, a contractor, who paid the price agreed to raze the old structure and cart away the debris.

What an Aviator Earned.

New York.—Mrs. Lincoln Beachey, who is seeking alimony from her husband, the aviator, alleges that in a year he earned $100,000 by flying. He made $75,000 in one summer, she says.

SHIRT OF MAIL IS MAN'S SALVATION

Bullets Fail to Penetrate Aluminum Garment of Merchant in Gun Fight.

New York.—After four bullets from two revolvers had been fired point blank at Benjamin Rukis, a fish dealer, in East New York, he laughed and laughed. Detective Walsh looked at him in amazement.

"I thought they hit you," said he. "Didn't they?"

"Sure," answered Rukis, "the bullets hit me all right, but they bounced off."

Rukis is an energetic fish dealer. He had rivals. Several weeks ago, he says, they poisoned his horses, six of them.

"I got something they can't poison," said he. "I got an automobile."

One automobile which he added to his business was somewhat faster than the six horses, so Rukis spread his trade more and more into the territory of his rivals. Then they deter-

He Fired Four Shots.

mined to go to extremes. They concluded to murder Rukis. But the genius of Rukis shone brightly.

With his chauffeur he rode in the car. Three men jumped up behind. Two of them drew pistols, and within a few feet of him, almost against him, they fired four shots. Then they leaped from the car and ran, one of them into the arms of Detective Walsh.

To the astonishment of Walsh, Rukis jumped over the side of the car and dashed for his assailant. Vigorously he beat the man till the detective had to draw his pistol to protect the prisoner. Then Rukis laughed and laughed.

"This man ought to be dead," said Walsh to the lieutenant at the Liberty avenue station, pointing to Rukis. "But he isn't."

"No, I ain't," said Rukis.

"Why aren't you dead?" asked Walsh.

For an answer, Rukis pulled up his shirt, revealing something shimmering and close fitting like a heavily knitted undershirt. Walsh touched it. It was an aluminum-armored shirt.

FIND WONDERFUL LOST LAKE

Body of Water Discovered in Colorado Full of Big Trout Resembling Eels.

Denver, Colo.—A lost lake, never before frequented by white men—a lake which contains native trout which closely resemble eels—has been discovered in a thick forest eight miles southeast of Trapper's lake, in Garfield county.

The lake covers an area of nearly 11 acres and in it are thousands of the strange looking fish.

The discoverers dubbed this body of water "Skinny Fish" lake. Col. James A. Shinn, state game and fish commissioner, has detailed a force of men to secure spawn at Skinny Fish.

"No one knew of the existence of this lake until last summer," says Col. Shinn. "The men who located it got out their fishing tackle. The lake was literally alive with trout, some of them 20 inches long, but on account of their great number they had been unable to get enough food in the lake, and they took on the appearance of eels.

"They are hardy, however, and the spawn is fertile and strong. Skinny Fish lies in the depths of a big forest, and it seems that until last summer no white man ever noticed that it was there. The fish, therefore, never were disturbed and their tribe increased at a tremendous rate. The big fish eat the little fish, so that now all the trout in Skinny Fish are big fellows, and each is watching the other sharply because, occasionally, when one of the big fellows is not on the lookout, a bunch of his own kind will kill him and devour him piecemeal."

Mifflin Is Peeved.

Philadelphia.—James Ewing Mifflin is peeved because authorities will not let him drive a dump cart in the historical pageant. His ancestor drove a dump cart to wealth and social position.

Wolves Expensive.

Paris.—Prince Troubetskoiy's tame wolves are expensive. One of them bit the prince's butler. The butler is suing the prince for $2,000 damages.

LESSONS FROM DRY-FARMING

Farmers in Humid Regions of East Can Gain Suggestions Regarding Conservation of Moisture.

From the dry-farming methods which are so necessary to success throughout the west, farmers in the more humid districts of the east can often gain valuable suggestions with regard to the proper conservation of moisture. One lesson which may be learned is in reference to the treatment of the small grains. The eastern farmer usually considers wheat, oats and barley as crops which cannot be cultivated. Consequently no attention is paid to them from the time they are sown until they are ready to harvest. Not so with the up-to-date farmer. He cultivates his grain fields after every rain from the time they are well started in the spring until they are too high to allow of further cultivation, says the Country Gentleman. The spike-tooth harrow is used for the earlier workings; as the grain grows larger the weeder is substituted. By means of the latter implement grain may be cultivated almost up to the time when it begins to head.

The advantages of this cultivation are two-fold. In the first place it serves to break the crust which is so likely to form after the spring rains, and to close the cracks which the frost has made in the winter grain fields. This lessens the evaporation of moisture, which is most rapid from crusted or cracked soil, and conserves it until it is most needed by the growing crop. The advantage of this precaution is most apparent in the semi-arid districts, but in dry seasons it is noticeable everywhere.

In the east rolling winter wheat as soon as it is safe to go on the ground in the spring is perhaps to be preferred to harrowing. If clover is planted with the wheat it should be sown before the rolling is done. The rolling covers the clover seed and also firms the soil about the roots of the wheat plants where it has been loosened by heaving. The other effect of cultivation is in the keeping down of weeds, and for this purpose it is just as useful and just as necessary in the east as in the west. Small weeds are very easily killed with the harrow or weeder, and if the work is properly done the grain will not be injured.

Three precautions are necesasry in handling small grain. Drilled grain only should be harrowed, for cultivation destroys a portion of the stand of that which has been sown broadcast and so lessens the yield. For the same reason the harrowing should be done in the direction of the drill rows rather than across them. Fields on which grass or clover seed has been sown should not be harrowed, for the young plants are as easily killed by this treatment as are the weeds. None of these precautions need be observed if the roller is used on winter grain, but the roller is of little or no use in killing weeds. In the east, except in the driest seasons, it will not usually be profitable to harrow grain fields more than once.

Another lesson which may be learned from the dry-farmer is the disking of land which is to be plowed later in order to keep the soil from baking until the plowing can be completed. This practice was begun in the west on grain stubble after harvest in order to hold whatever moisture was in the soil, for usually little rain falls after that time. Since the disking can be done much more rapidly than the plowing, there is less chance for evaporation, and the land then remains for some time in good condition for plowing.

In addition to remaining in condition to plow for a much longer period, land which has been disked is much less inclined to break up in clods and lumps than undisked soil, and hence is more easily put in condition for planting. The loose earth which is thrown to the bottom of the furrow unites much more readily with the furrow slice, and no larger air spaces are left.

MOISTURE IS GREAT FACTOR

Twelve or Fifteen Inches at Very Least Is Necessary to Insure Crop Every Season.

(By M. J. GREELEY, South Dakota.)

Those in the dry regions who have been so fortunate as to have had moisture enough to grow a pretty good crop every year for the past few, should not be too sanguine that they may not have to summer fallow, and like other dry-farmers, attempt a crop only every other year. It takes moisture, and at the very least above 12 or 15 inches of it, to insure a crop every season, and when this amount does not fall at about the right time, a crop cannot be grown and mature. Only from experience with one's own soil and local moisture can we know just what and how we must handle it.

Alfalfa Dairy Ration.

Don't be afraid to feed the alfalfa grown on the farm to the dairy herd. Alfalfa with silage, or alfalfa alone is the best ration with which you can supply the dairy cow. It is a poor cow, says Kansas Farmer, that will not return a profit on alfalfa at an average price of alfalfa and butter fat for a ten-year period. Too much alfalfa is grown for sale in Kansas.

It is better for the farm and more profitable, we believe, to grow and sell alfalfa than to grow and sell wheat, but we should feed all the alfalfa our live stock requires, not, of course, to be wasteful. Careful feeding of alfalfa to a good animal will in the long run pay better than its growth for market.

ERECTING A PUMPING STATION

More Certain to Obtain Good Water Supply in Valley Than on the Mesas or Plateaus.

Before any extensive plans are carried out regarding the installation of a pumping plant, the source of supply, the ground-water, must be thoroughly investigated as to quantity and quality. It is impossible to lay down hard and fast rules regarding the occurrence of underground waters which will apply to all sections alike. Naturally, we should be more certain of obtaining water in a valley, having a large drainage area and through which flows a perennial stream, than on the mesas or plateaus near the base of a mountain range, writes H. L. Bixey in the Denver Field and Farm. The supply is not found at a uniform depth in any section, the depth often varying within a radius of two or three hundred feet. After drilling a well it may be found that the flow is inadequate to supply the required needs. Another well may be put down a distance of 1,000 feet or even less and be found to yield an abundant supply. The topography of the country and geological formations of the sub-strata have a great deal to do with the occurrence of ground-water and the obtaining of the same at economical depths. In a section where it is proposed to institute pumping for irrigation it is wise to hire a professional well driver and have him put down a test well of the size thought to be suited to the needs of irrigation—from six inches to twelve inches. Several interested persons should bear the expense of such a well, each paying his pro rata. As the well is put down, a log of the various depths should be carefully kept, taking samples at every foot to determine the character of the various materials encountered. Thus when the well is completed or drilled to a satisfactory depth it will be known at what depth or depths the water was found and the character of the strata. If the water-bearing stratum is found in a good gravel form fifteen to twenty feet in depth, very favorable conditions obtain and a good flow of water is almost invariably assured. Under such conditions, a good flow being certain, the well may be operated as a community proposition or the various interests may be purchased by one person, the well thus becoming his sole property. If the well is a failure, those interested may consider that the money was well spent and that considerable money has been saved. Some one may say at this point: "Suppose that water were encountered only at great depth, then the well would be useless, as there is a limiting depth beyond which it is unprofitable and impracticable to pump." This is all very true and the importance of sinking the well before investing in expensive machinery is the more strongly emphasized by this query. In many sections it is unnecessary to sink test wells, as successful pumping plants are already in operation. In many of our mountain valleys there seems to be an underground water supply sufficient for almost any number of pumping plants. Some wells yield more than others, as the gravel strata are found at varying depths and character. The greatest difficulty encountered is in the handling the quicksand. Where the quicksand occurs with a coarse gravel a good well is almost always certain, as the quicksand can be pumped from the gravel, leaving open spaces in the gravel through which the water will flow more rapidly, giving the well a larger supply than when there is only quicksand. One should not desire too coarse a gravel, as difficulty is found in sinking the casing or removing large boulders from the well. In case the first stratum of water-bearing gravel encountered does not give large enough flow, the well will either have to be enlarged or sunk deeper with the view to striking the second or third stratum. Water found at lower depths will often rise, thus adding to the total supply of the well and giving the desired amount. Where two or three strata are encountered, perforated sections of pipe, preferably standard well strainer, of the same diameter as the standard well casing, are inserted between couplings and lowered to their respective depths. The first casing put down when the well is drilled is then pulled up, leaving the strainers exposed and free from dirt and sand. It is not good practice to have the strainer of the same length as the depth of the water-bearing stratum, as the water level is generally down by the pump, so that the strainer may not be utilizing its full length or it may destroy the suction of the pump to a certain extent, in which case the efficiency of the pumping plant will be lowered. As an example it may be said that for a gravel bed twenty feet in depth a twelve-foot strainer should be used, or even less, and the strainer extended to the bottom of the bed so that there will be a depth of gravel above the top of the strainer. One of the best strainers in use in this section is the Porcher strainer, which works admirably and should be used where the depth is not too great. In the deeper wells where the strainer may be pulled apart other types are used. The Porcher strainer is a heavy galvanized tube of varying length according to the depth of the water-bearing stratum.

Vegetables in August.

You can plant almost as many vegetables as flowers in August. Some of them will be nipped by the frost, some will have to be gathered very young and a few may never come to anything. But it is a poor gardener who refuses to run a few risks.